GEOGRAPHY EDUCATORS' NETWORK OF INDIANA

NEWSLETTER

Volume 105, Issue 3 Summer, 2005

Inside this issue:

Third Time's a Charm at the Indiana Geographic Bee!

After finishing in second place two years in a row, William Weitzel of Evansville wins the Indiana Geographic Bee finals and will represent our state at the national competition. He will have a busy May as he travels to Washington DC for the Geographic Bee May 24-25, and then competes in the National Spelling Bee four days later. He will be representing the state of Indiana and his school, the Evansville Day School, and we wish him the best of luck.

The 102 students invited to the state competition on April 1st had won their school competition and achieved top scores on the written exam they submitted to the National Geographic. After the preliminary round during which each student is asked eight questions, six automatically qualified for the final round by answering all eight questions correctly. Eighteen others answered seven of the eight questions correctly and competed in the tie-breaker round for the last four positions in the final round.

William Weitzel with parents, Stephan and Jeanne

We were fortunate to have Chris Wright, Chief Meteorologist for WTHR TV 13 in Indianapolis, moderate the final round. With Chris at the

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Three Outstanding Teachers Recognized at Annual ICSS

Once again, GENI took an opportunity to recognize three outstanding educators for their teaching of geography at the annual Indiana Council for the Social Studies Conference March 11th. These teachers have demonstrated excellent, innovative and effective teaching of geography and geography-related courses. They were presented with certificates from GENI and globes from the George F. Cram Company.

The nominees for the Indiana High School Award this year were strong! However, the candidate chosen by the Awards Committee embodies all of the qualities that one thinks of when imagining a great educator: cheerful, creative, inquisitive, knowledgeable, flexible, dynamic, professional, energetic, challenging yet supportive. These are all qualities that the Committee gleans from the materials submitted by those who nominate potential recipients. This year, Jim Schmidt of Penn High School in Mishawaka received the award.

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Special Points of Interest:

- Indiana Geographic Bee Champion
- Outstanding Geography Teacher of the Year Awards
- Ideas to kick off the fall semester
- Update on the new high school course: Geography and History of the World

Calendar of Events:

- June 3-4—**GENI Long Range Planning Meeting** to be held at Taylor University. Contact the GENI office if you are interested in attending.
- June 10— **First Annual SAVI Users Conference** at Ruth Lilly Health Education Center; 9:30am-4pm. For more information, visit http://www.savi.org/savii/conference/.
- June 15-17—**Economics & World Geography Professional Development Workshop**. A geographic approach toward teaching global economic change and internationalizing the secondary social studies curriculum. See page 8.
- June 17—**Indiana GIS Roadshow**: Kokomo, will be held at Ivy Tech. See page 9.
- June 20-24—**Ohio GeoTech Summer Institit-ue**. See page 9.
- July 10-23—**International Studies Summer Institute,** visit http://www.indiana.edu/~global/.
- Aug. 27—**GENI Advance Board Meeting** to be held at Thorntown Heritage Museum from 8:30am to 3:00pm. All are welcome to attend!
- Oct. 14-15—GENI's annual **Fall GeoFest** to be held at Brown county State Park from 5:00pm Friday until 4:pm on Saturday.

Resources:

- KIDS' CROSSING, NCAR—offers links to educational weather and science resources for a primary to middle school audience. There are games and activities on clouds and lightening, the water cycle, hazardous weather, and our changing global climate. www.ncar.ucar.edu/eo/kids
- EXPLORING CAVES—interdisciplinary materials on caves for grades K-3. The core of this USGS curriculum is an original 5-chapter read-aloud story that describes the adventure of 2 children who get lost in a cave and are led to safety by a talking bat. Includes teacher's guide. http://interactive2.usgs.gov/learningweb/teachers/explorecaves_explore.htm
- CREATE A SOIL PROFILE—using a downloadable template and carpet tape you purchase, discover a simple procedure for creating miniature soil profiles. http://soils.usda.gov/education/resources/k_12/lessons/profile
- CRUSTAL DEFORMATIONS AND FOLDS—defines and illustrates various types of faults and folds. Well organized and nicely illustrated. www.gpc.edu/~pgore/geology/geo101/crustaldeform.php
- JOURNEY NORTH—engages students in a global study of wildlife migration and seasonal change. K-12 students share their own field observations with classmates across North America. Make local observations and fit them into a global context. www.learner.org/jnorth
- WHAT TIME IS IT?—lists each country and by clicking on one, it gives local time of individual cities. http://time.world-stay.com/en/countries
- GRIDDED POPULATION OF THE WORLD—dedicated to the delivery of global population data and information produced at Columbia University. Find a variety of useful demographic data including most recent population estimates, urban extents, and other settlement patterns. Maps of individual countries are appealing. Data are available for download to GIS shapefile format. http://beta.sedac.ciesin.columbia.edu/gpw
- DOWNLOADABLE (PDF) MAPS on IndyGIS website, new base map sets. www.indygov.org/eGov/County/ISA/Services/GIS/home.htm
- HISTORICAL SIGNIFICANT EVENT IMAGERY—selected satellite images capturing some of the more important weather and environmental events over the last 30 years. Includes recent Indonesian tsunami. www5.ncdc.noaa.gov /cgibin/hsei/hsei.pl?directive=welcome
- LIFE IN SPACE—find an astronomy/astrobiology unit for upper elementary and middle school students. Interdisciplinary unit combines elements of astronomy, biology, geology and technology around central theme of life in space. www.astro.indiana.edu/~gsimonel
- PLANETARIUM—highly interactive site allows use of mouse to look around the sky. Pointing at stars shows their name, magnitude and constellation. Can change date, time, and latitutde for a different sky view. www.neave.com/lab/space/planetarium.html

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2nd Place finisher, Tyler Perfitt with Bee Coordinator Kathy Kozenski and Chris Wright.

helm the students were relaxed, despite the stress of the competition and cameras pointed at them. Thanks to production funding provided by the Lilly Endowment, Inc. and MacAllister Machinery, the final round of the Bee was taped this year and a DVD will be available for sale (check the GENI website for ordering information). The final round will also be televised around the state on local public broadcasting stations. WFYI in Indianapolis will run the Bee on May 20th at 5pm. Check your local listing for additional dates and times.

3rd Place finisher, Patrick Leary.

In the end, William Weitzel won the competition with Tyler Perfitt from Oak Hill Middle School in Evansville finishing second and Patrick Leary from Christ the King School in South Bend finishing third. All three students received a cash prize and a globe from the National Geographic. For more photos and a complete listing of the 102 competitors as well as the eighteen tie-breaker round students, visit the GENI website at www.iupui.edu/~geni.

Bethel College students help with the Bee Registration.

Congratulations to our Educator's Raffle winners: Chris York, Hanover Central in Cedar Lake; Mike Kramer, Washington JR High in Washington; Charlie Smith, Immanuel Lutheran in Seymour; Mary Therese Hahn, Nativity of our Savior in Portage.

2005 Indiana Geographic Bee Statistics

Gender Breakdown:

96 Boys 6 Girls

Grade Breakdown:

4th Graders—1 7th Graders—33
5th Graders—6 8th Graders—53
6th Graders—9

School Breakdown:

Public Schools—65
Private Schools—34
Non-Religious—4
Religious—30 (Catholic 19, Lutheran 6, Christian 5)
Home Schools—3

Chris Wright helps the top ten finalists relax before beginning the last round of competition.

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Jim Schmidt and GENI Exec. Director, Kathy Kozenski

Jim is a Geography Teacher Consultant that has participated in numerous GENI workshops as well as organize and lead several. The diversity of the program topics demonstrates the abilities of this World Geography educator. His depth of knowledge and his ability to share that knowledge with his students and his peers speaks to the value that he places on education. Jim has a positive relationship with his students which helps facilitate learning.

Because the Awards Committee found two of the Middle School nominations to be so outstanding, no elementary award was given in order to recognize both. The first went to Tim Lehman of Bethany Christian Middle School in Goshen. Although a relatively novice educator, Tim provides his students with an innovative and interesting approach to learning. Through workshops, institutes

Tim Lehman and GENI Exec. Director, Kathy Kozenski

and in-services, he expands his own knowledge in order to enrich his own curriculum and excite his students.

Tim enjoys getting his students in the field to utilize such tools as orienteering and geometry skills. They are required to apply the physical information they obtain and incorporate the human impact into the "equation." Although Tim's focus is on Social Studies, the diversity of his abilities shows as well, teaching additional woodworking and Bible classes. He also helps students through extra-curricular activities by coaching cross county and baseball.

The second middle school award went to Fran Reinke from Clark Middle/High School in Hammond. Fran teaches Earth Science by implementing creative and interdisciplinary projects for her students to maximize their educational experience. A favorite throughout the school is centered around Mardi Gras. After a trip to New Orleans, she put together a lesson to teach deltas, swamps and antebellum mansions along with analyzing the Misssissippi River from beginning to end.

Fran Reinke and GENI Exec. Director, Kathy Kozenski

The lesson culminates with a big celebration on Fat Tuesday when students bring in foods they have made from recipes for food consumed during Mardi Gras festivities around the world. She even distributes beads as they turn in their work. Students from other classes do the project in order to earn beads and join in the celebration.

Fran's love of geography comes alive in her Anatomy class when she assigns each student to a mock United Nations Board. Each student represents an assigned country and reports weekly on all diseases, scientific researth and medical news from that country.

She also provides opportunities for her students to get involved in their community to help others and the environment. She sets a good example by her own involvement with local wetland development projects and through world travel to better understand the environment. She has traveled to all continents, including Antarctica and the Arctic twice.

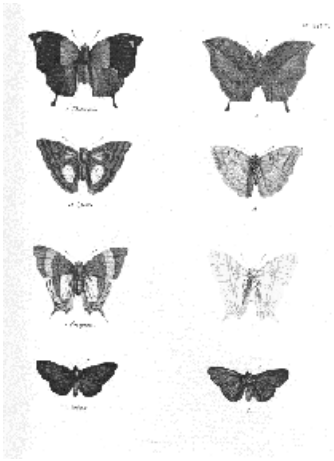
Fran always seeks any opportunity to gain new ideas to enliven her classroom and expects only the best of her students. She puts together academic teams when others see only marginality among the students. After forty-one years of teaching, she has no plans to retire any time soon with so many lives left to be touched!

ALEXANDER von HUMBOLDT -
Father of Early Victorian Sciences 1769-1859

By: Beth Sabato

A man of many trades, Alexander von Humboldt shaped the way we think today about cartography, meteorology, and even biology. His fame and notoriety was strongest throughout North and South America, rather than in his home country of Germany. Born in Berlin in 1769, Alexander's pre-exploration education at the universities of Frankfurt and Göttingen and at the mining academy of Freiburg in Saxony started to fuel his inquiries into new scientific principles. Very early on, Humboldt was convinced that scientific forces, such as mechanical and chemical, worked together in accord to sustain nature. He teamed up with a botanist to seek answers to his theories.

At the age of 30, he took his first expedition. His original plans were to travel to Africa, however, after hearing the horror stories of other such expeditions, his plans changed. With permission to explore the Spanish colonies in the new world, he was off to South and Central America. In his five year stay, he explored the over 60,000 km of land between Ecuador and Mexico recording about 60,000 different samples of

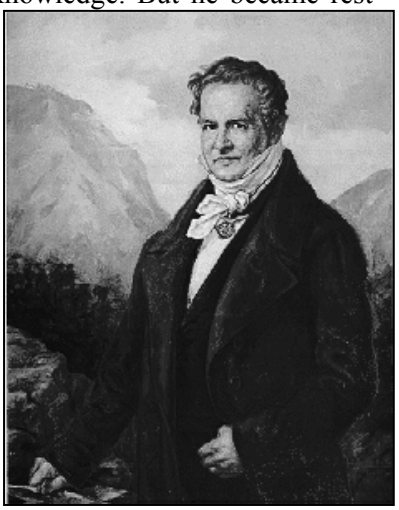


new plants and animals. He crossed over the Andes Mountains four times and was the first to climb Chimborazo Vulcan, which was believed to be the tallest peak in the world at the time. In addition to studying the flora and fauna, he also did a great deal of mapping, including over 1700 miles of the Orinoco River.

While traveling and climbing up and down the mountains, Humboldt noticed an interesting relationship between latitude and altitude, observing that the conditions at the top of a mountain in the tropics is relatively similar in vegetation and climate as the mountain tops north or south from the equator. By studying the commonalities of mean temperatures, he began to draw lines through various countries. After analysis of 'isothermal lines', he noticed that temperature also changed with the rise in elevation. This was not his only attempt at understanding changes in elevation. Humboldt noticed that the distribution of plants changed with elevation partly due to physical conditions.

But for Humboldt, it was not always an easy journey. While climbing Chimborazo Vulcan, his nose began streaming out blood because of the altitude and he also had to contend with suffocating amounts of mosquitoes along the Amazon. Everyone, including himself, doubted that he would make it out of the Americas. In fact, German newspapers had even reported him dead three separate times!

After returning from his first expedition, he began to record his findings in 29 volumes on different subjects of sciences ranging from geography, astronomy, botany, zoology, anatomy, geology and many more. In 1805, the King of Prussia appointed him Lord-in-waiting to further his knowledge. But he became restless and left on a second expedition in 1829 to Russia and Siberia.



It was in his later years after returning from his second exploration that he began what many think is his greatest work. *Kosmos* collected and connected all his knowledge available in his time. But with Humboldt being a romantic, his work also discussed how artistic perception affects how we perceive the scientific workings of theories today. Five volumes were published, including the final volume shortly after his death in 1859 from notes he had made for the work.

Alexander von Humboldt, known as a romantic geographer to many, became one of the fathers of early Victorian sciences increasing our knowledge of natural science. He was one of the first to bring geography to the world.

Sources: Wikipedia Encyclopedia, Humboldt State University, Alexander von Humboldt Biological Resources Research Institute

WEEKEND WORKSHOP REVIVED IN MARCH AT PURDUE UNIVERSITY

The Geography Educators' Network of Indiana sponsored a Weekend Workshop in Geography, March 11-13, 2005, for seventeen educators in the Lafayette area. Purdue University, host for the Workshop, provided quality facilities and meals, and the Purdue University School of Education provided credit hours for both in-service educator participants and pre-service educator participants. The partnership between GENI and Purdue's School of Education will continue to provide dynamic, appropriate, and much-needed Geography education opportunities for the region's educators at all levels.

Workshop participants immersed themselves in a hands-on experience, receiving many classroom lesson plans, resources, and field opportunities. Examples of the varied materials include Dorothy Drummond's *Thinking Geographically: All Things Considered* workbook, The Five Themes of Geography or The Six Elements of Geography, Latitude and Longitude, Family Geography Challenge, History of Music Around the World with a Dulcimer, World Climates, World Cultures, Economic Geography, Environmental Issues and Biomes.

Participants dress in traditional costumes as part of a presentation on teaching world cultures.

The foundations of Geography were shared with the participants on Friday evening and Saturday, concentrating on themes, latitude and longitude, and physical systems of the Earth. As traditional in GENI programs, content information, as well as classroom methodologies were shared with the participants. Further enhancements of the foundational information were presented in forms of the history and movement of the dulcimer around the world; architectural patterns and processes of movement, specifically, in the Lafayette area; international trade and economics patterns and trends highlighting the United States; national and global environmental issues; and ways to involve families in the study of global concerns.

Carolyn and David Moses present on the History of Music Around the World with a Dulcimer.

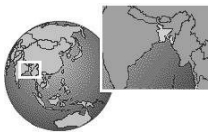
Field experiences included a Sunday brunch at the Loeb House Inn Bed and Breakfast and a discussion with Mr. Dick Nagel on the Italianate style house. This "filling" experience was followed by a lesson on architecture styles from the 19th and 20th centuries as well. Another opportunity provided by Purdue's School of Meteorology was a visit to the Climatic Center to learn about state-of-the-art, twenty-first century mechanisms for studying both the weather and the climate.

GENI extends gratitude to the participants, presenters, Purdue University faculty and staff, and field site personnel!

Participants complete a group activity on Geography and Architecture at the Loeb House Inn Bed and Breakfast.

IDEAS FOR STARTING YOUR FALL SEMESTER!

CLASSROOM SET-UP IDEAS: You can incorporate items in your classroom that stimulate geographic thinking all by themselves



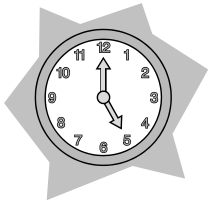
⇒ Have globes and numerous maps (different types) present in your room.

⇒ Add books to your literature section that are geographic in nature, including physical and cultural, or human geography. Several literature lessons can be found on the GENI website.

⇒ Label your classroom walls with directional indicators (North, South, East, West). Then use these as part of your daily routine. For example, if a student asks to get something from another part of the room, ask them which direction they will have to travel in order to get that item.

⇒ Turn your floor into a mini earth. Laminate latitude and longitude labels such as the "Equator—0°" and the "Prime Meridian—180°" and add additional lines based on your students' abilities. This works especially well if you have a tile floor that acts as a natural grid system.

⇒ Above a bulletin board, hang four to six clocks, each set at different times. Include a world time zone map beneath the clocks with the locations represented by each clock labeled on the map. You can use locations relevant to your area of study or simply let the students pick locations of interest to them. Have the students use the specific longitude of the location they have chosen to determine which time zone it falls within. This provides a great opportunity to include math problems figuring differences between time zones or time of arrival when traveling to another zone. Ask students if they have a relative on another continent and determine what time it would be at that moment for their relative. Suggested websites for time zone maps: www.worldtimezone.com http://aa.usno.navy.mil/faq/docs/world_tzones.html http://www.travel.com.hk/region/timezone.htm



⇒ Create a bulletin board or posters of the five themes of geography. Have students apply the themes to each area of study when applicable. This is especially meaningful when applied to current events (ie- the major earthquake in South Asia and the devastating tsunami it created).

LESSONS/ACTIVITIES: Stimulate geographic interest and thinking at the start of the semester with fun and engaging activities. Make sure your students understand just what geography is. Introduce or review the five themes.

⇒ Take advantage of favorable fall weather to get your students outside. Take a nature walk or do a nature hunt to discuss the environment, conservation, seasonal changes, typical climate vegetation, etc. Visit the following site http://www.wstar.org/hunt.html for an Earth Day Nature Hunt. The Science Spot website has a great "unnatural nature hunt" that can be adapted to any grade: http://sciencespot.net/Pages/nclessons.html#Anchor-35882. This fun activity increases mapping skills and challenges the powers of observation!

⇒ Discuss direction and introduce the use of compasses. Have students complete orienteering tasks/games and use this as a lead into GPS (Global Positioning Systems) and/or GIS (Geographic Information Systems) if appropriate for your grade level. Visit the GENI website for the *Schoolyard Compass Game* or *Flight Path* lesson plan.

⇒ Mapping exercises are fun for all grades. Have students map the classroom, the school, the school grounds, their bedroom, their home, their travel from home to school, etc. This can also be incorporated into any of the previous outdoor activities. Be sure to include the essential elements of a map. The following USGS site has some great interactive lessons for all grades: http://interactive2.usgs.gov/learningweb/teachers/lesson_plans.htm.

⇒ Use a beach ball globe for younger students. Play the Beach Ball Globe Toss Game (see GENI website under "lesson plans") to introduce representations of the earth and land/water disparities. *The Global Apple* is another activity found on the GENI website that stimulates global environmental thinking.

INDIANA STATE UNIVERSITY PRESENTS:

ECONOMICS & WORLD GEOGRAPHY PROFESSIONAL DEVELOPMENT WORKSHOP

A geographic approach toward teaching global economic change and internationalizing the secondary social studies curriculum

LOCATION: McCormick's Creek State Park, Canyon Inn, Spencer, Indiana

WHEN: June 15-17, 2005; from 9 AM to 4 PM daily

The workshop will focus on developing integrative lesson plans that address Indiana world geography and economics standards. The workshop will focus on the broad theme of globalization, the internationalization of trade, and the relationship between cultural and economic change. The program will provide attendees with hands-on experience working with maps, in-class exercises, and curriculum development .

BENEFITS:

- ⇒ Attendee Stipend
- ⇒ Shared lodging & Meals Provided
- ⇒ Free Curriculum Materials and Books
- ⇒ Professional Development Credit*

*Varies by school corporation, please consult your corporation's professional development coordinator

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Economics & World Geography Professional Development Workshop

Name _____

Grade & Building _____

School Corporation _____

Home Address _____

_____

Phone ( ) _____ E-mail _____

Detach and mail to: Indiana State University
Department of Economics
Holmstedt Hall, Room 275
Terre Haute, IN 47809

Contact Cathy Mitchell at 812-237-2159
email at ecmitch@isugw.indstate.edu or
Jay Gatrell at gejdg@isugw.indstate.edu
Fax: 812-237-4349

GeoTech Ohio Summer Institute

Looking for ways to integrate real-world data into your curriculum? Do you want to engage your students in authentic applications of technology that support your current curriculum standards? Do you want to investigate natural hazards, climate, land use change, population, watersheds, and biodiversity? At GeoTech Ohio you will learn how GPS and GIS technologies can bring the world into your classroom. This institute, designed by teachers for teachers, will help participants apply and integrate GIS and GPS technology in their middle school and high school classrooms.

This week-long institute will focus on the use of GPS and GIS technologies in educational settings. It is sponsored by Ashland University College of Education, New Albany-Plain Local School District, and conducted in cooperation with the United States Geological Survey (USGS).

The institute will be held 20-24 June 2005 in New Albany, Ohio. Instructors will be Dr. Joseph Kerski, Education Outreach Geographer at the USGS in Denver, Dr Herb Broda, Ashland University, and Josh Flory, New Albany Middle School.

The institute fee is $285 and includes five days of instruction, most breakfasts and lunches, and a copy of Mapping Our World. The book includes a one-year site license of the GIS software we will be using, data, and ready-to-use lessons for the classroom. Participants can also receive two semester hours of graduate credit from Ashland University Professional Development Services for an additional $446.

You can find complete details and registration information at: http://curriculum.new-albany.k12.oh.us/geotech/webpage.htm
For local housing, visitor, and institute information, contact Josh Flory at jflory@new-albany.k12.oh.us or 614-413-8572 voicemail box 5513. For institute registration and credit option questions, contact Dr. Herb Broda at hbroda@ashland.edu For technical information and details about the

GIS ROAD SHOW IS BACK

Date: June 17, 2005 Time: 9:00 am to 3:00 pm Location: IvyTech State College in Kokomo, Indiana

This event will provide an opportunity for both current and prospective GIS users in north central Indiana and beyond to hear about the latest developments in this GIS and GPS technologies. Anyone interested in the management, dissemination, or analysis of spatial information should attend.

The agenda for the road show will be as follows.
9:00 to 9:30 a.m. – Introductions and Welcome
9:30 a.m. to Noon – Applications of GIS
Noon to 1:00 – Lunch - presentation on the new Indiana State GIS Office
1:00 to 1:30 – Update on the Indiana State Orthophotography Project
1:30 to 3:00 – Special Topic – "GPS and GIS: Powerful Solutions for Complex Problems"

Visit www.polis.iupui.edu/tpc/training for more information.

NEED A MAP?

Create your own custom maps…

With nothing more than your Web browser, you can create free printable maps from over 150 layers of environmental, demographic, geologic, and infrastructure information, including aerial photos and topographic maps. Digital data can also be downloaded at no cost for use with geographic information systems (GIS).

Please contact the Indiana Geological Survey if you need assistance; you'll find us ready and willing to help you make YOUR map.

http://igs.indiana.edu/GISatlas

The Indiana Geological Survey, an institute of Indiana University, and Bernardin, Lockmueller & Associates are developing "A GIS Atlas for Indiana" with funding from the Indiana Department of Transpportation

Update on the New High School Social Studies Course

THANKS to many of you, Indiana is undertaking the development of a new high school Social Studies course, "Geography and History of the World"! As many of you are wondering, work toward the completion of a dynamic, relevant, appropriate, and academic set of Standards and Indicators for the new high school course is proceeding. Once the Standards and Indicators are ready for review, we will need your expertise as THE classroom (Social Studies) educators to provide constructive and professional comments. You are a vital part of the equation in the process, which is dictated by State Policies and Procedures. The information about the new Standards and Indicators (S&I) should be sent over the summer or early next fall, which may pose a difficulty for some.

GENI has several e-mail lists prepared to communicate the Standards and Indicators to Indiana educators: middle and high school Social Studies educators; post-secondary Geographers, Historians, and secondary Social Studies Methodologists; interested home-school educators; interested business persons and organizations. For the education community, a majority of the e-mail addresses are for school contacts, not home contacts. IF you wish to receive the announcement to your home e-mail or home postal mail, please, contact the GENI office at either 317.274.8879 or geni@iupui.edu to convey the address to which you would like the announcement sent. Otherwise, you may not have the opportunity to participate as Indiana Department of Education deadlines may occur prior to the start of the next Fall semester.

The ultimate goal is to produce a course that helps our students, who are our most precious resources, to understand the world and that prepares our students to become twenty-first century citizens. In that light, the new course will focus on the human aspects of the world in which we live. The course will truly demonstrate the nature of Geography as a lens through which many aspects (disciplines) of our world are viewed, studied, analyzed, and projected to the future. In answer to the challenge of preparing a new course that incorporates twenty-first century employment skills, knowledge of the world today, and integrates Social Studies disciplines, this course reflects the beauty of the Social Studies curriculum as an integrated set of disciplines. The S&I focus on geographic processes and themes, historic themes and events, economic interactions, governmental relationships, and civic responsibilities. Aspects of the S&I highlight the use of geo-spatial technologies (GPS, GIS, satellite imagery, remote sensing, aerial photography and others), which are THE technology tools of the early twenty-first century. World Geography provides the perfect platform for meeting the challenges facing today's student, who will become tomorrow's twenty-first century, global leader.

After the Standards and Indicators are completed at all levels of review, the Indiana Department of Education, in conjunction with GENI, the History Educators' Network of Indiana (HENI via Indiana Council for History Education), and several key education outreach organizations, will provide opportunities for professional development in a number of locations around the state, via a variety of formats, and over several years. Most of the post-secondary institutions that have a Department of Geography or a School of Education will be involved in some fashion. We will attempt (dependent upon funding) to meet your needs and to be somewhat convenient. Announcements will be sent as opportunities develop. Please continue to ask questions of either Chris McGrew, IDOE, cmcgrew@mgmt.purdue.edu or myself, Kathy Kozenski, GENI, geni@iupui.edu. This course will be the first of its kind in the country and will provide lots of opportunities. Enjoy the summer!

Geographically, Kathy Kozenski
GENI Executive Director

Teaching in Taiwan for a year...the experience of a lifetime!

The Teaching in Taiwan program is an exciting new opportunity for Indiana elementary teachers to spend a year in Taiwan, teaching English to elementary students. Dr. Suellen Reed, Superintendent of Public Instruction, recently signed an historic agreement with the Republic of China (Taiwan) that will offer Indiana teachers the opportunity to study and teach in Taiwanese schools.

Through the agreement, up to 15 experienced and newly certified Indiana teachers will be given the opportunity to study and teach in Taiwanese schools for an academic year. The Taiwanese government will provide Indiana's teachers with orientation training, housing arrangements, and wages comparable to their current salaries.

Find out more information about the program and download an application package at http://www.doe.state.in.us/opd/Int_St/taiwan.htm. Contact Amy Conway at amconway@doe.state.in.us or 317-232-9138 with any questions. The deadline for this year is May 18. However, the program will continue through the 2007-2008 academic year so consider applying next year as well.

Cupcake Drilling to Understand Indiana's Subsurface Geology

By Todd A. Thompson

Number of Students:
Small to large groups. This exercise has been conducted with groups as large as 150.

Age: 4th and 5th (Can also be used with kindergarteners to 7th graders.)

Objective:
A job of a geologist is to determine types and arrangement of rocks that are at or below the earth's surface. Outcrops are few, scattered, and typically of limited vertical extent to derive a thorough understanding of stratigraphic relationships. Geologists supplement natural and man-made exposures with strategically placed cores. In this activity, students drill into a layered cupcake to simulate subsurface drilling and rock coring.

Materials Needed:
1:500,000 scale bedrock and surficial geologic maps of Indiana [Indiana Geological Survey Miscellaneous Maps 48 and 49—with Miscellaneous Map 48 under Miscellaneous Map 49]
White cake mix (makes 20-24 cupcakes)
Frosting
Food Coloring
Foil baking cups
Plastic utensils (forks and knives)
Clear plastic straw (large straws from Arby's are the best)

Preparation:
Mix batter according to the cake mix directions. Separate the batter into 3 bowls and add food coloring to the batter. The darker the color the better. We use red, blue, and yellow food coloring for the batter, and save the green food coloring for the frosting. Spoon one tablespoon of each color in a foil baking cup. The order does not matter. You do not need to smooth out the batter between colors, but do not fill the cup more than half full or it will overflow during baking. Bake according to the cake mix instructions. Ice the cupcakes with the green-colored frosting to the very edge of the foil so that no color from the cupcake is showing.

Display the bedrock and surficial geology maps with the surficial map over the bedrock map.

Directions:
Show the students the surficial geologic map and explain to the students that this map illustrates different sediment types at the surface of Indiana. Show the students the sand along the streams and glacial till and moraines in the central and northern parts of the state. Show the students the area in south-central Indiana where bedrock is exposed at the surface. Explain to the students that this is the only place in Indiana that geologists can directly see bedrock. Explain to the students that in the northern port of the state more than 300 feet of glacial material overlies the bedrock.

Fold over or remove the surficial map to expose the bedrock map below. Explain to the students that this

map shows different types of rock that occur below the earth's surface and the surficial sediments. You can pick rock units on the map and read off the rock type from the explanation.

Pose a question to the students: "if most of Indiana's bedrock is covered with unconsolidated material, how did the geologist determine what bedrock was below it?" Students will often start offering suggestions. Tell them to hold off with their suggestions and that we will conduct an experiment to see how a geologist would determine "what is below his/her feet."

Give each student a cupcake, utensils, and straw. They should leave the cupcake alone until told to work on it. Tell them that today they are "apprentice geologists," and the cupcake is a small part of the Earth for them to work on. We let them know that the cupcake is "special" inside and that they should think of the green icing s vegetation on the Earth's surface. Ask them what it looks like inside their cupcake. Some students will try to look along the side. Explain to them that you used foil cupcake tins to prevent them from easily seeing inside. Ask them how could they figure out what it looks like in their cupcake. You will get many suggestions. Here are a few we typically get, with replies:

1. Scrape back the icing with one of the utensils. This will show the cupcake's surface and often bulldozers are used to expose rock. But it does not expose rocks at depth.
2. Cut or bite into the cupcake. This would work and it is similar to man-made (quarries, pits, road cuts) and natural outcrops (drainages). Unfortunately, outcrops are few and not always where you need them. Also they are limited in depth; the deeper a geologist must drill into the Earth, the larger the hole in the ground must be.
3. X-ray it at the hospital. Geologists use tools such as ground-penetrating radar and seismic shockwaves to image the Earth below their feet. This approach, however, does not tell you what the rocks are, only how they are arranged.

You may get more ideas, and eventually someone will suggest using the plastic straw to drill into the cupcake and pull it out to see the layers. Tell them that is exactly what geologists do.

Have them all drill their cupcakes at the same time. We have found that it is best if the cupcake is left on the table. Have them hold the straw upright and rotate it as they SLOWLY push it in. We ask to "hear their motors" and they all start making engine sounds. Once the straw is at the bottom, they should leave it in until everyone is done drilling. Explain to them that they have just drilled into the Earth and collected a core. Have them all pull the straw out at the same time. You can have them drill several times and eventually cut or bite into their cupcake to observe the colored layers.

Explain to them that the cake inside the straw is called a "core," and if they cored the cupcake many times they could determine how the cupcake is layered. This is what geologists did to produce the bedrock geologic map of Indiana. Tens of thousands of drill holes were needed to construct the map. Summarize the activity, and let the students know that when geologists need to determine what rocks and sediments are below their feet, they "drill and collect cores."

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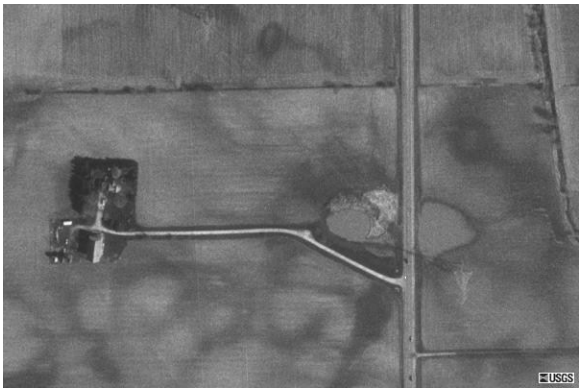
"Are You Looking at Me?"



By James A. Schmidt Penn High School, Mishawaka, IN

Purpose: To introduce GIS and Demographics to students.

Level: Secondary (easily adapted for middle school)

Indiana Social Studies Standards:
5.3.9; 6.3.1; 6.3.2; 8.3.11; WG 1.1, 1.3, 1.5, 4.1, 4.7, 6.1

Objectives:
Students will be able to create a descriptive summary of their zip code using the data acquired on the internet.

Materials:
Internet-equipped computer lab
two handouts listed below

Background: Students need to be able to use various technologies to make sense of their world. The Indiana Geography Standards require the teaching of GIS and other related geo-technologies. This assignment is intended to address the need for introducing GIS to students in schools that lack the appropriate level of technology.

Procedure: Pass out a copy of the paper titled, ***"Where Are You?"*** and have them look at both the picture and the demographics. Answer any vocabulary questions. Ask the students to brainstorm where the picture featured might be located. Discuss the demographics and what they might mean. Brainstorm more possible answers. Do not let them know the answer (just yet!). Pass out the paper entitled ***"What Are You Looking At?"*** Have the students read along as you explain the assignment. Have students follow local procedure for logging on to the internet and opening a word processing program. Circulate to ensure that students are on task.

Closing: After all students have created their assignments and printed, have them return to the mystery picture from the beginning of class and have them brainstorm again about the location of the picture. I usually use my own zip code, but instructors could use any place in the United States if they prefer.

Extension: Have the students explore and investigate the "National Map" link found at the terraserver website. Instead of having students research their own zip code, assign them each different zip codes to compare and contrast based on the photo and demographics.

Evaluation: The finished product should include an aerial photo of the student's neighborhood as well as the demographics. The student should then write a brief summary that includes the data in their analysis.

"Where Are You?"

	MY ZIP CODE	REGIONAL AVERAGE	NATIONAL AVERAGE
DEMOGRAPHICS			
Medium household income	$34,088	$41,367	$39,702
EDUCATION			
Students per teacher	17.6	17.3	16.1
High school graduation rate	77.11%	79.06%	76.44%
CRIME			
Violent crime risk	3	4	3
Property crime risk	5	5	3
COST OF LIVING			
Overall	83.2	84.8	100.0
HEALTH & SAFETY			
Air quality	32.0	32.0	50.0
Watershed quality	47.0	47.0	50.0
ECONOMY			
Unemployment rate	4.50%	5.62%	4.70%
HOUSING			
Median home purchase costs	$80,857	$79,676	$137,081
TRANSPORTATION			
Commute by carpool	8.34%	11.07%	14.57%
Commute by own car	82.53%	78.24%	71.60%

"What Are You Looking At?"

Assignment Directions

⇒ After logging in, open an internet browser and a word processing program. In the upper right hand corner of your paper (word processing document), type your name, the date, and the block. Make sure you save and save often throughout this assignment.

⇒ Direct your internet browser to this address: http://terraserver.microsoft.com/

⇒ Once there, type in your address, city, state, and zip code, then hit enter. Once the web quits searching there should be two choices: a topographic map and an aerial photo. Click on the aerial photo. Use the toolbars to zoom in or zoom out until you recognize where you are.

⇒ Once you have identified your neighborhood, click on "download" in the upper right-hand corner. Once your image has downloaded, right click on the aerial photo to copy it. Paste it in your word processor. Note the date the image was taken directly below it by typing the date.

⇒ Now page back and click on the topographic map option. Download the map as you did the photo and paste it directly below your aerial photo in your word processing document.

⇒ Below your aerial photo on the terraserver website there should be a link to information about your zip code. Click on the correct one! If you do not see this option, go back and click on the "topographic map" option and click it. The link should be below the map. Click the correct one! Next, scroll down to the demographics section of the page and begin gathering the data. There are **eight** different sections of information about your zip code. Gather **at least one** piece of data from **each** section. Be sure to include the regional and national data, too. You may "cut and paste" or write the data down and then place it in your word processor document in table format on a second page after the page containing your aerial photo and topographic map (see ***"Where Are You?"*** for an example).

⇒ Your final piece of the puzzle is to write a summary of the demographics about your zip code. This needs to be at least a paragraph long that includes specific details from the data. Type the paragraph directly below the data you gathered. Once you have completed your photo and demographics and written your perfect paragraph, SAVE, and then print, staple and turn it in before the end of the period.

Can you identify the white object in the photo to the left? What is it used for?

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